Health Research Caucus
Diabetes Research and Innovation in Canada

PRESENTER SUMMARY

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Genome-wide approaches to discover genes causing type II diabetes

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Type II diabetes is caused by a combination of genetic and environmental factors which result in decreased insulin secretion from the pancreas and decreased insulin action in most tissues in the body. The past six years has seen rapid advances in understanding the genetic basis of diabetes; and over 50 different genetic regions (called "risk loci") that are associated with an increased risk of developing diabetes have been discovered. While several of these risk loci contain genes which were already known to regulate insulin synthesis, secretion and response; or which were already being used as drug targets for treating diabetes; most had never previously been shown linked to diabetes. My group's research focuses on developing new approaches to discover new risk loci for diabetes and to determine how these inherited changes in an individual's DNA can alter the function of genes and proteins in cells that secrete or respond to insulin. Since it takes many years for diabetes to develop, my hope is that these risk genes will allow us to better treat diabetes and slow its progression at an early stage before serious and potentially life-threatening damage to the heart, blood vessels, kidneys and nervous system occurs.